

Applicant : Nolan et al.
Patent No. : 6,201,162
Issued : March 13, 2001
Serial No. : 09/392,869
Filed : February 23, 2001
Page : 4

Attorney's Docket No.: 11112-002001

20
17
-- 27. (New) The catalytic complex of claim 14, wherein the complex is linked to a solid support by means of a link between said anionic ligand and said solid support.--

B3
24
12
-- 38. (New) The catalytic complex of claim 14, wherein the complex is linked to a solid support by means of a link between said nucleophilic carbene and said solid support.--

REMARKS

Claims 9-21, and 23-38 are pending. The Examiner has previously indicated that the claims 9-21 are allowable as written, and that claims 23-26 would be allowable if rewritten so as not to depend from rejected base claims. Therefore, originally filed dependent claims 23 and 25 have been rewritten to be allowable independent claims. For example, amended claim 23 is intended to be, and is believed to be, originally filed independent claim 22 with the limitations of originally filed claim 23 added. Similarly, amended claim 25 is intended to be, and is believed to be, originally filed independent claim 22 with the limitations of originally filed claim 25 added. New claims 27-38 correspond to originally filed claims 2-7, but have been rewritten to depend from allowable independent claims 9 and 14. No new matter is introduced with the amendments or new claims.

Attached is a marked-up version of the changes being made by the current amendment.

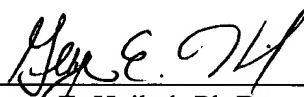
Applicant : Nolan et al.
Patent No. : 6,201,162
Issued : March 13, 2001
Serial No. : 09/392,869
Filed : February 23, 2001
Page : 5

Attorney's Docket No.: 11112-002001

Applicant asks that all claims be allowed. Please apply any charges or credits to Deposit Account No. 06-1050, with reference to Attorney Docket No. 11112-002001.

Respectfully submitted,

Date: June 29, 2001



George E. Heibel, Ph.D.
Reg. No. 42,648

Fish & Richardson P.C.
45 Rockefeller Plaza, Suite 2800
New York, NY 10111
Telephone: (212) 765-5070
Facsimile: (212) 258-2291

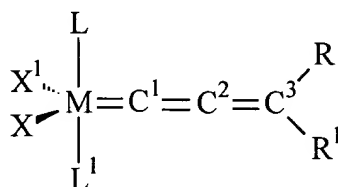
Version with markings to show changes made

In the claims:

Claims 1-8 and 21 have been cancelled without prejudice.

Claims 23 and 25 have been amended as follows:

-- 23. (Amended) [The method of claim 22] A method of performing ring closing metathesis, said method comprising contacting a diterminal diene with a catalytic complex under conditions appropriate, and for a time sufficient to produce a cyclic alkene, wherein the catalytic complex has the formula:



wherein M is Os or Ru;

C¹, C² and C³ are sp²-hybridized carbons, wherein either or both of C¹ and C² are optionally absent;

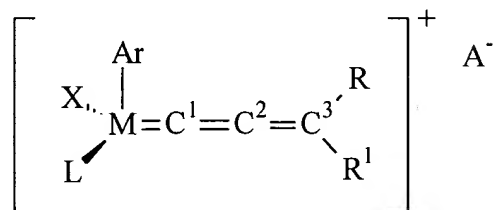
R and R¹ are independently selected from the group consisting of hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₂-C₂₀ alkoxycarbonyl, aryl, C₁-C₂₀ carboxylate, C₁-C₂₀ alkoxy, C₂-C₂₀ alkenyloxy, C₂-C₂₀ alkynyloxy, or aryloxy, each R and R¹ optionally being substituted with C₁-C₅ alkyl, halogen, C₁-C₆ alkoxy, or with a phenyl group substituted with halogen, C₁-C₅ alkyl or C₁-C₅ alkoxy;

X and X¹ are independently selected from the group consisting of anionic ligands;
and

L and L¹ are selected from the group consisting of nucleophilic carbenes, phosphine, sulfonated phosphine, phosphite, phosphinite, phosphonite, ether, amine, amide, sulfoxide, carbonyl, nitrosyl, pyridine and thioether, wherein at least one of L or L¹ is a nucleophilic carbene. —

-- 25. (Amended) [The method of claim 22] A method of performing ring closing metathesis, said method comprising contacting a diterminal diene with a catalytic complex under conditions

appropriate, and for a time sufficient to produce a cyclic alkene, wherein the catalytic complex has the formula:



wherein

C^1 , C^2 and C^3 are sp^2 -hybridized carbons, wherein either or both of C^1 and C^2 are optionally absent;

M is selected from the group consisting of Os and Ru;

R and R^1 are independently selected from the group consisting of hydrogen, C_1 - C_{20} alkyl, C_2 - C_{20} alkenyl, C_2 - C_{20} alkynyl, C_2 - C_{20} alkoxy carbonyl, aryl, C_1 - C_{20} carboxylate, C_1 - C_{20} alkoxy, C_2 - C_{20} alkenyloxy, C_2 - C_{20} alkynyloxy, or aryloxy, each R and R^1 optionally being substituted with C_1 - C_5 alkyl, halogen, C_1 - C_6 alkoxy, or with a phenyl group substituted with halogen, C_1 - C_5 alkyl or C_1 - C_5 alkoxy;

X is an anionic ligand; and

L is a nucleophilic carbene; and

Ar is an aryl substituent, bonded to M by an η^6 bond.—

New claims 27-38 have been added, as indicated below:

-- 27. (New) The catalytic complex of claim 9, wherein at least one of the anionic ligands X and X^1 are independently selected from the group consisting of halide, carboxylate, alkoxy, aryloxy, and alkyl sulfonate.--

-- 28. (New) The catalytic complex of claim 27, wherein at least one of the anionic ligands is chloride.--

-- 29. (New) The catalytic complex of claim 9, wherein the nucleophilic carbene ligand comprises a carbene carbon further bonded to two heteroatoms having electronegativity greater than that of carbon, wherein the heteroatoms are independently selected from the group consisting of nitrogen, oxygen, and sulfur.--

-- 30. (New) The catalytic complex of claim 29, wherein the nucleophilic carbene ligand comprises a saturated or unsaturated 1,3-diheteroaromatic cyclic compound.--

-- 31. (New) The catalytic complex of claim 9, wherein the complex is linked to a solid support by means of a link between at least one of said anionic ligands and said solid support.--

-- 32. (New) The catalytic complex of claim 9, wherein the complex is linked to a solid support by means of a link between at least one of said nucleophilic carbenes and said solid support.--

-- 33. (New) The catalytic complex of claim 14, wherein the anionic ligand X is selected from the group consisting of halide, carboxylate, alkoxy, aryloxy, and alkyl sulfonate.--

-- 34. (New) The catalytic complex of claim 33, wherein the anionic ligand is chloride.--

-- 35. (New) The catalytic complex of claim 14, wherein the nucleophilic carbene ligand comprises a carbene carbon further bonded to two heteroatoms having electronegativity greater than that of carbon, wherein the heteroatoms are independently selected from the group consisting of nitrogen, oxygen, and sulfur.--

-- 36. (New) The catalytic complex of claim 35, wherein the nucleophilic carbene ligand comprises a saturated or unsaturated 1,3-diheteroaromatic cyclic compound.--

-- 37. (New) The catalytic complex of claim 14, wherein the complex is linked to a solid support by means of a link between said anionic ligand and said solid support.--

-- 38. (New) The catalytic complex of claim 14, wherein the complex is linked to a solid support by means of a link between said nucleophilic carbene and said solid support.--